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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/666,171	09/19/2003	Samer R. White	65858-0024	7110

10291 7590 12/14/2006

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EXAMINER

SILVER, DAVID

ART UNIT PAPER NUMBER

2128

DATE MAILED: 12/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/666,171

Applicant(s)

WHITE, SAMER R.

Examiner

David Silver

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 September 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

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DETAILED ACTION

1. Claims 1-21 were originally presented for examination.
2. Claims 1-21 were rejected.
3. Claims 1-21 are currently pending in Instant Application.
4. The Instant Application is not currently in condition for allowance.

Response to Arguments

5. Applicant's arguments regarding the 35 USC § 102 / 103 have been fully considered and are respectfully traversed but are moot in view of the new ground(s) of rejection and therefore not addressed in Instant Office Action.

- 5.1 It should be noted however it appears Applicant has misread some of the grounds of rejections.

Specifically, page 9 paragraph 2 of Remarks dated 9/25/06 ("Remarks") states "Claims 16-17 were rejected as allegedly unpatentable over Berkly in view of Sterler et al. (U.S. 4,985,835).¹" Wherein the footnote erroneously explain why they believe Sterler was used as the rejection. Attention should be drawn to paragraph 18 of the Previous Office Action dated 5/25/06, which recites "Claims 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Berkeley, "ME176", (See PTO-892) as applied to claim 1 above in view of **Strand (US 5,373,749)** and in further view of taken **Official Notice.**" The rejection was using two references and in further view of Official Notice taken, not two references as erroneously concluded by the Applicant. The Sterler reference was mentioned, but not relied-upon, for Applicant's convenience as an attempt to avoid unnecessary Official Notice challenges.

Response: Abstract

6. Objection to abstract has been withdrawn.

Response: Remarks

Applicants state:

"Applicant believes that there are also reasons other than those set forth below why the pending claims are patentable, and reserves the right to set forth those reasons, and to argue for the

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patentability of claims not explicitly addressed herein, in future papers."

Examiner Response:

Applicants are reminded to in the interest of prosecution to put forth all reasons as to why they believe the claims are patentable. In the future such responses may be considered non-responsive.

Response: Constructing of Claims**7. Applicant states:**

"The Examiner cites from a portion of MPEP 2111.01 to indicate that the claims will be interpreted to their broadest reasonable meaning as defined in the specification, apparently objecting to the language in the specification that 'the scope of the appended claims should be construed as broadly as the prior art will permit. It is respectfully submitted that the examiner is using the wrong standard and instead should be looking at MPEP 2111.' (emphasis added)

8. Examiner Response:

The MPEP is an acronym that stands for **Manual of Patent Examining Procedure**. Applicant's statements that the Examiner is relying in "wrong standards" of the MPEP are not understood. The Examiner is puzzled by the Applicant's arguments, MPEP 2111.01 is a subsection of MPEP 2111.

Response: Claim Interpretation**9. Applicant states:**

"The Examiner suggests that the claimed invention is directed toward a simplified calculation of tangential velocity of a point on a rod, which rotates about a pivoting point. Tangential velocity is nowhere mentioned in the specification. Nor is the word velocity used in any of the independent claims. In fact, the word velocity is only mentioned in dependent claims 7 and 21 of the application as filed."

10. Examiner Response:

Applicant's attention is drawn to MPEP 2144.06. In this instance, the Applicant is claiming a rod (body), pivoting point (first point / seat belt), and the tangential velocity of the head given the radius displaced by the body. One of ordinary knowledge of the theorem of similar triangles and the Pythagorean theorem would find the Examiner's interpretation equivalent to that which is claimed.

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Applicants state that they utterly disagree with the interpretation of "displacement". However, after studying page 11 & 12 section 1 & 2 it is not clear what the Applicants are setting forth as an argument.

Response: Tangential Velocity

11. Applicants do not appear to understand the concept of tangential velocity, as well as its inherent in types of calculations performed by the recited claim. It is noted that Applicant requested during the interview that the primary examiner define the meaning tangential velocity. The primary examiner refused to define it because Applicants and their Representatives are presumed to be knowledgeable in the art(s) that relate to their invention.

12. Furthermore, Applicants appears to argue that the words are different but do not appear to argue the merits of the claim objection.

13. Regarding objections to claims 1, 2, 5, 6, and 7:

The Examiner thanks the Applicant for amending the Instant Claims. The objections have been withdrawn.

Response: 35 USC 112, claim 6

14. Applicants state:

"It is believed that the Examiner now has a better understanding of the intent of the claim. On the other hand, the undersigned has a better appreciation of the Examiner's initial confusion."

(remarks: page 13)

15. Examiner Response:

Respectfully, the Examiner is ~~not confused and~~ objects to such mischaracterization.

Response: 35 USC § 112

16. The 35 USC § 112 rejections of claims 6, 2-4 19-20 have been withdrawn in response to Applicant's amendments.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

17. Claims 1, 2, 4-17, and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Mazur (**US 6,522,998**) and Mathwarehouse.com to show that the features claimed are inherent. See MPEP 2131.01.

Mazur discloses: 1. A method of simulating movement of a seat-belted occupant and estimating an amount of forwardly-directed displacement undergone by said seat-belted occupant with respect to an occupant's seat, comprising steps of:

securing a test dummy at a first point that is both fixed with respect to said test dummy and fixed with respect to a fixed frame of reference, said first point selectively acting as a pivot point for said test dummy (**Fig 5, 6, 7 and their descriptions; col: 3 line: 46 to col: 4 line: 15**);

applying a linear force to a second point that is fixed with respect to said test dummy and offset from said first point, said second point moving solely in a forward direction with respect to the said fixed frame of reference upon application of said linear force, said linear force causing a measurable amount of forward-directed displacement of said second point with respect to said fixed frame of reference while causing said test dummy to pivot about said first point (**Fig 5 item 40, item 68, and their descriptions; Fig 5, 6, 7 and their descriptions; col: 3 line: 46 to col: 4 line: 15**);

establishing a third point that is fixed with respect to said test dummy and offset from said first point and said second point, said third point undergoing an amount of forward-directed displacement with respect to said fixed frame of reference due to said pivoting of said test dummy (**Fig 5 dummy 14 before and after shown by arrow**); and

estimating an amount of said forward-directed displacement occurring at said third point by multiplying said measurable amount of forward-directed displacement occurring at said second point by a ratio AD/AB , where AD represents a distance between said first point and said third point and where AB represents a distance between said first point and said second point (**This is an inherent feature. This is a simply application of the theorem of similar triangles which is taught in elementary schools. See Mathwarehouse.com's "Side Splitter Theorem" page. Specifically, see page 2**

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practice problems 1 and $2VW/VX = WY/XZ$, and page 1 illustrated example two where $AB / AC = BD/CE$).

Mazur discloses: 2. The method according to claim 1, further comprising a step of adjusting said estimated amount of forward-directed displacement occurring at said third point to account for a difference between a location of said third point and a location of an outermost point of said test dummy first making contact with an object or defined region of space lying in front of said test dummy **(Fig 5 item 10a and its description)**.

Mazur discloses: 4. The method according to claim 2, wherein said adjusting step comprises the addition of an offset representing a distance between said third point and said outermost point of said test dummy **(Fig 5 dummy 14 before and after shown by arrow)**.

Mazur discloses: 5. The method according to claim 1, further comprising the step of limiting movement of said first point with respect to said fixed frame of reference by means of a rigid member, with one end of said member attached to said fixed frame of reference and an opposite end of said member attached to said first point, only further forward displacement of said first point with respect to said fixed frame of reference being prevented by said rigid member **(Fig 5 item 40, 44, 22, and 12; col: 3 line: 46 to col: 4 line: 15; Fig 5 dummy 14 before and after shown by arrow)**.

Mazur discloses: 6. The method according to claim 1, further comprising the step of limiting movement of said first point with respect to said fixed frame of reference by means of a flexible tether, with one end of said tether attached to said fixed frame of reference and an opposite end of said tether attached to said first point, only further forward displacement of said first point with respect to said fixed frame of reference being prevented when said tether is fully extended said measurable amount of forward-directed displacement of said second point is equal to a length of said tether **(Fig 5 item 40, 44, 22, and 12; col: 3 line: 46 to col: 4 line: 15; Fig 5 dummy 14 before and after shown by arrow)**.

Mazur discloses: 7. The method according to claim 1, further comprising the steps of:

measuring an amount of time that said test dummy was subject to said application of said linear force; and estimating a velocity of said test dummy by dividing said estimated amount of forward-

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directed displacement by said measured amount of time (**Fig 5; col: 3 line: 5-18 with emphasis on "given time" and "momentum"; col: 3 line: 60-66**).

As per claim 8, note the rejection of claim 1 above. The Instant Claim recites substantially same limitations as the above-rejected claim and therefore rejected under same prior-art teachings.

Mazur discloses: 9. The system according to claim 8, wherein said fixed frame of reference comprises a support guide upon which said test dummy is movably supported (**Fig 5 and descriptions**).

Mazur discloses: 10. The system according to claim 9, further comprising a drive guide associated with said support guide, said drive guide pivotably supporting said test dummy and solely capable of being linearly displaced along said support guide in both a forwards and backwards direction (**Fig 4, 5, 6, and 7a/b and their descriptions**).

Mazur discloses: 11. The system according to claim 10, further comprising a support brace affixed to said test dummy and connecting said test dummy to said drive guide (**Fig 5 item 38 and description**).

Mazur discloses: 12. The system according to claim 11, wherein said first and second points are located on said support brace, and said third point is located on said test dummy (**Fig 5 item 38 and description**).

Mazur discloses: 13. The system according to claim 9, further comprising a restraining system that fixes said first point with respect to said support guide (**Fig 5 item 38 and description**).

Mazur discloses: 14. The system according to claim 12, further comprising a restraining system that fixes said first point with respect to said support guide (**Fig 5 item 38 and description**).

Mazur discloses: 15. The system according to claim 13, wherein said restraining system comprises a rigid, non-extendable member, with one end of said member attaching to said support guide while an opposite end of said member attaches to said first point (**Fig 5 item 38 and description**).

Mazur discloses: 16. The system according to claim 13, wherein said restraining system comprises a flexible tether, with one end of said tether attaching to said support guide while an opposite end of said tether attaches to said first point, said tether restricting forward-directed displacement of said first point with respect to said fixed frame of reference once said measurable amount of forward-directed linear

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displacement of said second point is equal to a length of said tether (**Fig 5 item 40, item 68, and their descriptions; Fig 5, 6, 7 and their descriptions; col: 3 line: 46 to col: 4 line: 15**).

Mazur discloses: 17. The system according to claim 16, wherein said estimation of said forward displacement occurring at said third point is established with respect to a starting position of said test dummy, said starting position corresponding to a state of said system where any forward displacement at said second point results in said test dummy beginning to tilt about said first point (**Fig 5 item 40, item 68, and their descriptions; Fig 5, 6, 7 and their descriptions; col: 3 line: 46 to col: 4 line: 15; fig 5 before and after positions**).

Mazur discloses: 21. The system according to claim 8, wherein a velocity of said test dummy can be estimated by dividing said estimated amount of forward displacement of said third point by an amount of time during which said test dummy underwent displacement due to application of said linear component of said force at said second point (**Fig. 5, 6, 7a/b and descriptions**).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

18. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mazur (**US 6,522,998**) as applied to claim 1 above, in view of Official Notice taken.

As per claim 3, Mazur discloses all limitations of claim 2. Mazur does not explicitly disclose that the outermost point of said test dummy is a nose. Official Notice is taken with respect to this limitation. It would have been obvious to one of ordinary skill in the art at the time of Applicant's invention that the nose is the outermost point and to use it to more accurately model an impact. In most instances the nose is the first point to make contact with an object in front of it. As such it would have been obvious to model it in such a way that resembles the most realistic and common occurring condition.

19. Claims 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mazur (**US**

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6,522,998) as applied to claim 1 above in view of Official Notice taken.

As per claim 18, Mazur discloses all limitations of claim 17. Mazur however does not disclose an inclinometer mounted at or nearby said second point, said inclinometer detecting when said test dummy begins to tilt about said first point, thereby indicating when said test dummy is in said starting position.

There are two ways of measuring the velocity, as performed by Mazur (**Fig 5; col: 3 line: 5-18 with emphasis on "given time" and "momentum"; col: 3 line: 60-66**): first method is with an accelerometer, and the second method is with an inclinometer. One measures the acceleration while the other measures the angle, both of which are used to derive tangential acceleration and displacement. It would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to use either an inclinometer or an accelerometer.

As per claim 19, Mazur discloses: The method according to claim 1, further comprising the step of adjusting said estimated amount of forward-directed displacement occurring at said third point to account for a difference between a location of said third point and a location of an outermost point of said test dummy most likely to first make contact with an object or defined region of space lying in front of said test dummy (**Fig 5 item 10a and its description**).

As per claim 20, Mazur discloses: The method according to claim 2, wherein said adjusting step comprises the addition of an offset representing a distance between said third point and said outermost point of said test dummy (**When the first point is equal to the outermost point this limitation is inherent.**).

Conclusion

20. All claims are rejected.

21. The Instant Application is not currently in condition for allowance.

22. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of

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the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Silver whose telephone number is (571) 272-8634. The examiner can normally be reached on Monday thru Friday, 10am to 6:30pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kamini Shah can be reached on 571-272-2279. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Art Unit 2128

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